

## Diverging Diamond Interchange Results from the Right Transportation Solution Survey

A survey analysis by Organizational Results in cooperation with Heartland Market Research

### MoDOT Summary Statement

*Based on the results from this research, MoDOT can confidently state that the diverging diamond was the right transportation solution for the Interstate 44 and Route 13 intersection. The overall results show:*

- *Most Springfield area residents were very satisfied with the project and generally believe MoDOT provided the right transportation solution (89.4%).*
- *More than 85% of the respondents were either “very” or “fairly” familiar with the project roadway.*
- *The overwhelming majority of respondents thought the project made the roadway safer (96.7%), more convenient (95.1%), less congested (95.2%), easier to drive (86.9%), and was better marked (89.8%).*

### Summary of Key Indicators

Familiar with Roadway	Safer	More Convenient	Less Congested	Easier to Drive	Better Marked	Right Transportation Solution
85.3%	96.7%	95.1%	95.2%	86.9%	89.8%	89.4%

### Background

The Missouri Department of Transportation (MoDOT) delivered the first diverging diamond interchange in the western hemisphere at the intersection of Route 13 and Interstate 44 in Springfield, Missouri. Popular Science magazine named the interchange one of its 100 best innovations of the year for 2009. The project sought to reduce congestion and improve safety at the interchange for about \$3.2 million, which is one-third the cost of a standard rebuilt interchange that typically costs \$10 million. The interchange was opened to traffic in June 2009.

### Approach

In December 2009, MoDOT’s annual “Right Transportation Solution Survey” results were released. This mail survey contracted with Heartland Market Research, LLC to assess customer satisfaction with select MoDOT projects. The diverging diamond interchange project at I-44/Route 13 was one of 30 projects included in this survey.

Heartland drew a sample of residents from eight ZIP code areas and mailed a total of 400 Springfield area addresses the survey. A total of 75 responses were received, which is a gross response rate of about 19%.

The I-44/Route 13 interchange project was briefly described and the majority of the survey questions were related to the project, such as determining if the completion of the project increased safety, convenience, and made it easier to drive. In addition, two questions were asked about the overall value of the project and the respondents were given the opportunity to provide comments about why the project was the right transportation solution.



## Results

### Familiarity with Roadway

The first two questions in the survey help measure the respondent's familiarity with the affected roadway. Almost 71% said they were very familiar with the affected roadway (70.7% with a standard deviation of 15.8%) while most of the others said they were somewhat or fairly familiar with the roadway. Only 4% stated they were not familiar with the affected roadway.

#### Are you familiar with this roadway?

Not at All		Somewhat		Fairly Well		Very Well	
3	4.0%	8	10.7%	11	14.7%	53	70.7%

Respondents were also asked to indicate how often they had used the specified section of the road in the past month. More than 53% of the respondents were frequent or regular users of the affected roadway (defined as those who used the affected section of the road almost every day, most weekdays and once or twice a week). About one-third of the respondents indicated they had only used the roadway a few times and 13.3% had never used the roadway.

#### How often have you used this section of road in the past month?

Never		A Few Times		Once a Week		Twice a Week		Most Weekdays		Almost Every Day	
10	13.3%	25	33.3%	11	14.7%	10	13.3%	7	9.3%	12	16.0%

### Respondent Property Loss

MoDOT wanted to investigate the possibility that people who lost property to construction projects were negatively impacting the survey results. However for this project, none of the respondents had lost property to build the project.

#### Did you lose property to build the project?

Yes		No	
0	0.0%	74	100.0%

### Safety

One of MoDOT's primary goals is to make Missouri's roads safer. At 96.7%, an overwhelming majority of Springfield area residents agree that the local project achieved this goal (defined as those who strongly agree and agree), with only 3.3% that disagreed.

#### Is the road now safer?

Strongly Agree		Agree		Disagree		Strongly Disagree	
28	45.9%	31	50.8%	2	3.3%	0	0.0%

### Improving Traffic Flow

Another one of MoDOT's goals is to improve traffic flow. Two questions were asked to help capture this information. Respondents were asked if the project resulted in the road being "more convenient" and "less congested." Slightly more than 95% of Springfield area residents agreed that the project resulted in a more convenient roadway (defined as those who strongly agree and agree).

#### Is the road now more convenient?

Strongly Agree		Agree		Disagree		Strongly Disagree	
35	57.4%	23	37.7%	2	3.3%	1	1.6%

### **Results (cont'd)**

Congestion is one aspect where MoDOT has much less control over the end result compared with other aspects such as safety. In many cases projects are undertaken in areas experiencing population growth – with populations that continue to grow while the project is under construction, so congestion may not be perceived to be improved even if the roadway is now handling more traffic than it did previously. Again, slightly more than 95% of Springfield area residents agreed that the project resulted in a less congested roadway.

#### **Is the road now less congested?**

<b>Strongly Agree</b>		<b>Agree</b>		<b>Disagree</b>		<b>Strongly Disagree</b>	
41	66.1%	18	29.0%	2	3.2%	1	1.6%

### **Driving Environment**

Another project goal was to improve the driving environment of the roadway by making it easier to navigate and easier to understand. Two questions were asked to help capture this information. Respondents were asked if the project resulted in the road being “easier to drive” and “better marked.” Nearly 87% of Springfield area residents agreed that the project resulted in a roadway that was easier to drive and almost 90% agreed that the roadway was better marked.

#### **Is the road now easier to drive?**

<b>Strongly Agree</b>		<b>Agree</b>		<b>Disagree</b>		<b>Strongly Disagree</b>	
31	50.8%	22	36.1%	6	9.8%	2	3.3%

#### **Is the road now better marked?**

<b>Strongly Agree</b>		<b>Agree</b>		<b>Disagree</b>		<b>Strongly Disagree</b>	
22	37.3%	31	52.5%	6	10.2%	0	0.0%

### **The Right Transportation Solution**

Overall, Springfield area residents had a very positive perception of the project with about 80% of respondents stating that the project was the right transportation solution.

#### **Overall, do you think this project was the right transportation solution?**

<b>Not at All</b>		<b>Not Really</b>		<b>Somewhat</b>		<b>Very Much</b>	
3	4.5%	4	6.1%	6	9.1%	53	80.3%

### **The Right Priority**

To investigate a potential reason why some respondents did not believe their project to be the right transportation solution, Springfield area residents were asked if they felt another project should have been delivered before this project. Only about 15% of respondents believed another project should have been a higher priority. However, 85% of respondents said no other project was of higher priority.

#### **Do you feel that another project should have had a higher priority?**

<b>Yes</b>		<b>No</b>	
10	14.7%	58	85.3%